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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,914	04/10/2001	Masaki Kato	109187	7191

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OLIFF & BERRIDGE, PLC  
P.O. BOX 19928  
ALEXANDRIA, VA 22320

EXAMINER

NGUYEN, HUNG

ART UNIT PAPER NUMBER

2851

DATE MAILED: 04/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application N .

09/828,914

Applicant(s)

KATO ET AL.

Examiner

Hung Henry V Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed 3/26/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-27, 29 and 36-45 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-13, 28, 30, 31, 34 and 35 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 32 and 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 26 March 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 16.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-2, 5-13, 28, 30-31 and 34-35 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Makinouchi (U.S.Pat. 5,677,754).

With respect to claims 1, 28, 30, Makinouchi (fig.1) disclose an exposure apparatus for transferring a predetermined pattern formed on a mask (R) onto a substrate (W) in an overlapping manner, so as to expose a pattern larger than the predetermined pattern of the mask onto the substrate, comprising all basic features of the instant claims such as: a light source (1) for supplying illumination light; an illumination optical system (2-8) for guiding the illumination

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light to the mask having the predetermined pattern; the illumination optical system having an illumination area defining unit (5) disposed at a position substantially optically conjugate with the mask, for defining a predetermined area corresponding to an illumination area to be formed on the mask; and an imaging optical system (6A, 6B, 7A, 7B, 8) disposed between the illumination defining unit and the mask for forming the illumination area on the mask by projecting the predetermined area defined by the illumination defining area onto the mask; the exposure apparatus further having an adjusting unit (6A, 6B) for adjusting an optical characteristic of the imaging optical system so as to adjust an optical characteristic in the illumination area formed on the mask or in an exposure area formed on the substrate.

With respect to claims 2, and 31, Makinouchi et al teaches an projection optical system (13).

With respect to claims 5-13, 28, 34-35, Makinouchi et al further teaches the adjustment unit including moving units (11, 18, 15,) for adjusting at least one of the magnification, distortion, astigmatism, curvature of field and decentering astigmatic difference in the imaging system optical system (see fig.1).

3. Claims 1-2, 5-13, 28, 30-31 and 34-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Schultz et al (U.S.Pat. 6,295,122).

With respect to claims 1, 28, 30, Schultz et al (fig.1) disclose an exposure apparatus for transferring a predetermined pattern formed on a mask (330) onto a substrate (500) in an overlapping manner, so as to expose a pattern larger than the predetermined pattern of the mask onto the substrate, comprising all basic features of the instant claims such as: a light source (50) for supplying illumination light; an illumination optical system (60-300) for guiding the

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illumination light to the mask having the predetermined pattern; the illumination optical system having an illumination area defining unit (14) disposed at a position substantially optically conjugate with the mask, for defining a predetermined area corresponding to an illumination area to be formed on the mask; and an imaging optical system (300) disposed between the illumination defining unit (14) and the mask (330) for forming the illumination area on the mask by projecting the predetermined area defined by the illumination defining area onto the mask; the exposure apparatus further having an adjusting unit (600) for adjusting an optical characteristic of the imaging optical system so as to adjust an optical characteristic in the illumination area formed on the mask or in an exposure area formed on the substrate.

With respect to claims 2, and 31, Schultz et al teaches an projection optical system (400).

With respect to claims 5-13, 28, 34-35, Schultz et al further teaches the adjustment unit including moving units (70, 91, 331) for adjusting at least one of the magnification, distortion, astigmatism, curvature of field and decentering astigmatic difference in the imaging system optical system (see fig.1).

4. Claims 1-2, 5-13, 28, 30-31 and 34-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Ozawa (U.S.Pat. 6,501,535).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

With respect to claims 1, 28, 30, Ozawa (fig.1) disclose an exposure apparatus for transferring a predetermined pattern formed on a mask (11) onto a substrate (14) in an overlapping manner, so as to expose a pattern larger than the predetermined pattern of the mask

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onto the substrate, comprising all basic features of the instant claims such as: a light source (1) for supplying illumination light; an illumination optical system (2-10) for guiding the illumination light to the mask having the predetermined pattern; the illumination optical system having an illumination area defining unit (6) disposed at a position substantially optically conjugate with the mask, for defining a predetermined area corresponding to an illumination area to be formed on the mask; and an imaging optical system (9A,B) disposed between the illumination defining unit (6) and the mask (11) for forming the illumination area on the mask by projecting the predetermined area defined by the illumination defining area onto the mask; the exposure apparatus further having an adjusting unit (17) for adjusting an optical characteristic of the imaging optical system so as to adjust an optical characteristic in the illumination area formed on the mask or in an exposure area formed on the substrate.

With respect to claims 2, and 31, Ozawa teaches an projection optical system (13).

With respect to claims 5-13, 28, 34-35, Ozawa further teaches the adjustment unit including moving units (17, 16, 23) for adjusting at least one of the magnification, distortion, astigmatism, curvature of field and decentering astigmatic difference in the imaging system optical system (see fig.1).

***Allowable Subject Matter***

5. Claims 3-4, 32-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 14-27, 29, 36-45 are allowed with the reasons set forth in the previous office action.

***Response to Amendment***

6. Applicant's amendment filed March 26, 2003 have been entered. A request for approval of drawings correction has been approved.

In response to the office action mailed November 8, 2002, applicant has amended claims 1, 22, 30, 36 and 43 and cancelled claims 46-66.

With respect to the prior art rejection, applicant's arguments to amended claims have been carefully reviewed but have been traversed in view of new ground of rejections as set forth above.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 703-305-6462. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

hvn  
April 7, 2003

  
**HENRY HUNG NGUYEN**  
**PRIMARY EXAMINER**